



## **Economic Impact Analysis Virginia Department of Planning and Budget**

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### **9 VAC 20-80– Solid Waste Management Regulations Department of Environmental Quality March 24, 2000**

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The Department of Planning and Budget (DPB) has analyzed the economic impact of this proposed regulation in accordance with Section 9-6.14:7.1.G of the Administrative Process Act and Executive Order Number 25 (98). Section 9-6.14:7.1.G requires that such economic impact analyses include, but need not be limited to, the projected number of businesses or other entities to whom the regulation would apply, the identity of any localities and types of businesses or other entities particularly affected, the projected number of persons and employment positions to be affected, the projected costs to affected businesses or entities to implement or comply with the regulation, and the impact on the use and value of private property. The analysis presented below represents DPB's best estimate of these economic impacts.

### **Summary of the Proposed Regulation**

The Virginia Waste Management Act authorizes the Waste Management Board (board) to supervise and control waste management activities in the Commonwealth and to promulgate regulations necessary to carry out its powers and duties. The board proposes about 300 changes to this regulation. Changes which may have an economic impact include: 1) a prohibition on siting new sanitary landfills on wetlands, 2) a prohibition on siting new sanitary landfills on floodplains, 3) quarterly groundwater monitoring (instead of semiannual) for half or more of active sanitary landfills, 4) elimination of the requirement for a permit amendment to establish groundwater protection standards, 5) permission for sanitary landfill owners to use presumptive remedies without a permit amendment, 6) development of a permit-by-rule procedure for composting facilities, 7) creation of a control program for unauthorized waste, 8) a requirement for at least two benchmarks at industrial landfills, 9) a requirement that industrial landfills have a

gas management plan, and 10) a requirement that industrial landfills keep their waste at least 50 feet from the property line.

## **Estimated Economic Impact**

Under the current regulation, owners who wish to build or expand a sanitary landfill on wetlands may do so if they create twice as much acreage of new wetlands elsewhere. The proposed regulation prohibits the construction of new sanitary landfills on wetlands outright. Expansions of sanitary landfills on wetlands that have not already been approved are also prohibited. These prohibitions became an effective part of the Code of Virginia in July 1999 and are now proposed to be in the regulation. The Department of Environmental Quality (department) is aware of three owners that have intended to construct sanitary landfills on wetlands that have been prevented by the new prohibition. To such owners the value of the land has diminished when they are prevented from conducting their intended business there. The value of potential landfill sites that do not contain wetlands may increase as the wetland alternative is removed. The benefit of the prohibition is the prevention of environmental damage associated with the destruction of existing wetlands. Determining whether the costs of this proposed amendment outweigh the environmental benefit is not possible given the lack of detailed information on the cost of using alternative sites and the relative value of constructed wetlands compared to “neutral” wetlands.

Since this regulation was first created in 1988, owners wishing to construct a sanitary landfill on a floodplain have been required to armor the landfill to prevent washout during times of flood. Of the 42 sanitary landfills built since 1988, none have been sited on a floodplain.<sup>1</sup> This is likely largely due to the high cost armoring, along with other engineering difficulties and liability concerns associated with a potential washout. The proposed regulation prohibits the construction of sanitary landfills on floodplains. Though it is possible that at some point in the future an owner would be willing to pay the high cost of armoring, handle the other engineering concerns and risk the repercussions of a washout, it seems likely that the proposed prohibition of construction on a floodplain will have little effect in the near term due to the high costs and risks involved in landfill construction on a floodplain.

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<sup>1</sup> Source: Department of Environmental Quality

The proposed regulation will require owners of active sanitary landfills to conduct groundwater monitoring on a quarterly basis. This requirement became an effective part of the Code of Virginia in July 1999. The current regulation requires semiannual monitoring. Owners may continue to monitor semiannually if they can demonstrate that their landfill is not hydrologically connected to a wetland. There are 68 active sanitary landfills in the Commonwealth, 15 of which have made this demonstration.<sup>2</sup> The department believes that as many as half of the landfills may be demonstrated to be not hydrologically connected to a wetland. This leaves 34 to 53 sanitary landfills with quarterly monitoring instead of semiannual monitoring. The department estimates that the cost of groundwater monitoring varies from \$800 to \$1,200 per well and that the average sanitary landfill has eight or more wells. Thus, for the average owner required to conduct quarterly monitoring, the additional cost is estimated to range from \$12,800 to \$19,200 per year.<sup>3</sup> Given the estimated range of 34 to 53 affected landfills, the estimated annual cost of this rule would be between \$435,200 and \$1,017,600.<sup>4</sup> The benefit would derive from quicker detection of groundwater contamination. A contaminant potentially could be detected as much as three months earlier with quarterly monitoring versus semiannual monitoring. On average contaminants would be detected one and a half months earlier.<sup>5</sup> Without a concrete estimate of the benefit of earlier detection of contaminants, it cannot be determined whether the potential benefit of earlier detection outweighs the substantial additional compliance costs.

Each year about 20 sanitary landfill owners are required to conduct more detailed groundwater monitoring.<sup>6</sup> Under the current regulation they are required to obtain a groundwater protection standards permit amendment. The process involves a \$3,600 fee plus administrative costs for the owner and \$1,800 in expenses for the department.<sup>7</sup> The proposed regulation would

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<sup>2</sup> Ibid.

<sup>3</sup> This range is based on an average of eight wells per sanitary landfill. According to the Department of Environmental Quality, the average sanitary landfill has eight or more wells. If the actual average is more than eight, then this range would be adjusted up accordingly.

<sup>4</sup> Again, this range is based on an average of eight wells per sanitary landfill. If the actual average is more than eight, then this range would be adjusted up accordingly.

<sup>5</sup> If we assume that the likelihood that a contaminant will reach a detectable level is the same every day of the year, then on average contamination will be detected three months after it has occurred when monitoring is conducted at six-month intervals. Using the same assumption, average contamination will be detected one and half months after it has occurred when monitoring is conducted at three-month intervals.

<sup>6</sup> Source: Department of Environmental Quality

<sup>7</sup> Ibid.

allow owners to follow the required more detailed groundwater monitoring without the permit amendment fee and its associated process. The owner would only need the written approval of the department's director. Together, owners would save about \$72,000 in fees plus administrative costs, and the department would save about \$36,000 in expenses. There are no significant new costs to this proposal. Thus, it would likely produce a net economic benefit.

About one sanitary landfill per year is required to take remedial actions. The proposed regulation would allow their owners to take certain remedial actions without obtaining a permit amendment. This could save the owner a \$3,600 fee plus administrative costs and the department about \$1,800 in expenses.<sup>8</sup> According to the department, the specified remedial actions are proven to be consistently beneficial and have been consistently approved in the past; so there are no significant costs to this proposed regulatory change.

The proposed regulation would allow permit-by-rule for composting facilities receiving less than 700 tons per quarter. This would save potential compost operators a \$9,600 fee plus administrative costs and the department about \$1,800 in expenses.<sup>9</sup> The elimination of the fee and the administrative and time costs associated with the permitting process may encourage more composting, particularly by farmers. To the extent that the creation of permit-by-rule encourages composting, it may be beneficial to the environment. Composting breaks down nitrogen-rich materials into a less nitrogen-rich substance. Nitrogen-rich materials, such as manure, which runoff into water degrade water quality. This proposed amendment appears to produce a net economic benefit since it does not seem to produce a significant cost.

The proposed regulation creates a control program for unauthorized waste. All 236 currently active facilities, including landfills, materials recovery facilities, transfer stations, incinerators, and composting facilities, would be required to hire on average, an additional half time worker to examine arriving materials for unauthorized waste.<sup>10</sup> The benefits of this proposal include the avoidance of environmental damage (liners at non-hazardous waste sites are not capable of containing hazardous waste), danger to unsuspecting employees and neighbors, re-routing and handling costs, and fines. According to DEQ, a single misplaced drum of

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<sup>8</sup> Source: Department of Environmental Quality

<sup>9</sup> Ibid.

<sup>10</sup> Ibid.

hazardous waste can produce thousands of dollars in costs. There is insufficient information to determine by how much the control program for unauthorized waste will reduce the incidence of damaging misplacement of waste. Thus, it cannot be determined whether the potential benefits of the program outweigh the costs.

Benchmarks are surveying reference points used to determine the elevation and location of waste within the landfill. Currently, there are about 15 industrial landfills with only one benchmark.<sup>11</sup> The proposed regulation requires that all industrial landfills have at least two benchmarks. According to the department, at least two benchmarks are necessary to obtain accurate elevation and location information. The second benchmark would allow for significantly more accurate determination of whether waste is too high or off of the approved design area. At times waste has been found to cross property lines on to neighbors' land. The second benchmark could decrease the likelihood of that happening. The department estimates the cost to be about \$1,500 per benchmark; and that about 15 industrial landfills have only one benchmark and will need to construct a second.

Under the current regulation sanitary and CDD (construction, demolition and debris) landfills are required to have a gas management plan, but industrial landfills are not. The proposed regulation would require industrial landfills to develop a gas management plan or demonstrate that such a plan is unnecessary (due to minimal risk). The plan would include testing for methane gas. The department estimates that the cost of either a gas management plan or a demonstration that it was unnecessary would be about \$5,000 per landfill. The benefits include the ability to quickly implement the plan when needed in order to minimize both methane gas exposure and the risk of explosions for neighbors and employees. Though it seems likely that the benefit of reducing the risk of illness and injury due to methane exposure and explosions may outweigh the one-time cost of \$5,000, the lack of an accurate estimate of the benefits precludes a firm conclusion on this point.

Proposed language requires that new industrial landfills keep waste at least 50 feet from the property line. Sanitary and CDD landfills already have this requirement. According to the department, the space is needed to properly monitor groundwater, methane gas, etc. A possible

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<sup>11</sup> Source: Department of Environmental Quality

improvement to this proposal could be made by prohibiting the industrial landfill owner from keeping waste within 50 feet of property lines, unless given written consent by the neighbor in question. The neighbor may be willing to accept a payment to let the industrial landfill use part or all of the 50 feet and to let monitoring of the landfill be conducted from the adjacent property. By agreeing to the bargain, both the landfill owner and the neighbor indicate that they are better off. And since all necessary monitoring could still be conducted, there does not appear to be any cost to including the “unless given written consent” language.

## **Businesses and Entities Affected**

The proposed amendments would affect the 251 landfills, 34 materials recovery facilities, 59 transfer stations, 7 incinerators, 1 composting facility, and three other permitted facilities covered by this regulation.<sup>12</sup> Potential facilities would also be affected. Firms that provide groundwater monitoring, methane gas detection, and benchmarking services, as well as owners of property with wetlands are also affected.

## **Localities Particularly Affected**

The proposed changes to the regulation affect localities throughout the Commonwealth.

## **Projected Impact on Employment**

Many facilities will likely hire new employees or employ existing workers longer hours in order to comply with the control program for unauthorized waste. Increased demand for groundwater monitoring, methane gas detection, and benchmarking services may produce a modest increase in employment in firms that provide those services.

## **Effects on the Use and Value of Private Property**

The prohibition on the use of wetlands for new sanitary landfills may reduce the value of some plots of land, and increase the value of other plots. The net impact is likely to be small.

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<sup>12</sup> The number of facilities was provided by the Department of Environmental Quality.

The proposed amendments will likely increase the demand for groundwater monitoring and methane testing services. Some civil engineering firms may gain new business due to the requirement for two benchmarks. The value of firms that provide these services may increase.